# Explaining the Sense of Identity of E-sports Chat Stream Users Based on the Need for Interaction and Entertainment: The Mediating Role of Cyberloafing

Received: 2025-05-17
Accepted: 2025-10-11
Vol. 8, No.1. Winter.2027, 43-59

**Rezgar Taghiabadi**[1]
**Ali Afrouzeh**[2]*
**Mohammad Pourkiani**[2]

[1] Ph.D. Student of Sport Management, Allameh Tabatabai University, Tehran, Iran
[2] Assistant Professor of Sport Management, Shahid Beheshti University, Tehran, Iran

*Correspondence:
Ali Afrouzeh, Assistant Professor of Sport Management, Shahid Beheshti University, Tehran, Iran
Email: a_afrouzeh@sbu.ac.ir
ORCID: 0000-0002-9088-3526
DOI: 10.22098/rsmm.2026.17458.1476

## Abstract

**Purpose:** This study aims to explain the mechanisms influencing users' sense of identity in esports live stream chats. It is a quantitative, descriptive-correlational, and field-based research with an applied objective.

**Methods:** The statistical population consisted of Iranian viewers of live esports streams with at least one year of experience and continuous activity in chat rooms on platforms such as Twitch, YouTube, and Rubika. The data collection instrument was a standardized questionnaire that was translated and validated for reliability and validity before use. The sample size was estimated at 221 based on Cochran's formula and an initial variance of 0.144, and ultimately 220 completed questionnaires were analyzed. Data analysis was conducted using Structural Equation Modeling (SEM) with Smart PLS4 software.

**Results:** Findings indicated that both the need for interaction and the need for entertainment have a significant positive effect on cyberloafing, and cyberloafing directly and positively influences the sense of identity among esports live stream viewers. These results highlight the key role of cyberloafing in shaping users' sense of identity within the interactive environment of esports streams.

**Conclusion:** Ultimately, strengthening reciprocal interaction structures and creating motivational mechanisms for active user participation—such as awarding recognition badges to motivated users and developing personalized communication features—contribute to the dynamism and resilience of virtual communities. Moreover, continuous attention to users' psychological and emotional states and providing social support frameworks can enhance digital social well-being and stabilize the sense of identity among esports live stream chat users.

**Keywords:** Cyberloafing, virtual interaction, esports, streamer.

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## Introduction

Video games have been recognized from the outset not merely as individual entertainment, but as a platform for creating social bonds that bring people together around shared interests and goals. These social bonds have been significantly strengthened within the framework of e-sports, where gamers not only participate in online competitions but also engage in the formation of virtual communities and continuous interaction with other users on digital platforms (He, Yu, Shi, Yao, & Chen, 2024). In Iran, according to the report by the National Foundation of Computer Games (1401), approximately 34 million people are identified as gamers, of whom more than 12 million are considered professional e-sports audiences. These figures reflect the breadth and diversity of the gaming user population, including the participation of 41% women and an average age of about 19 years, who spend on average 90 minutes daily in this environment.

With the increasing penetration of digital technologies, today more than 80% of internet users are engaged with video games in some way whether through playing, watching live game streams, content creation, participating in online communities, or following news in this field (X. Zhang, 2025). Among these, live streaming of games, as a two-way and real-time communication process, has become a unique opportunity for the expression and reinforcement of users' social identity. Audiences in these spaces are not merely passive viewers but active members of a virtual community who experience a sense of belonging, being understood, and influence through chat rooms, emojis, and participation in real-time discussions (Peng, Zhang, & Nie, 2025).

Features such as simultaneity, live interaction, and the possibility of immediate response on streaming platforms create the conditions for a more pronounced social presence, which in turn strengthens users' sense of social identity within online groups (Newham, 2023). Through this multi-layered and intertwined experience, users engage not only with game content but also with other community members, gradually forming a collective identity in the form of membership in fan communities, followers of streamers, or like-minded gamers. This feeling, especially among young users, can play a crucial role in shaping digital identity structures and sustaining online participation (Lee, Yuan, & Bi, 2025).

Researchers have examined the motivations for watching live streams from various perspectives and, based on different theories, identified motivational drivers. These motivations include emotional factors (Lim, Choe, Zhang, & Noh, 2020), cognitive factors (Hilvert-Bruce, Neill, Sjöblom, & Hamari, 2018), utilitarian motives (Y. Ma, 2021), hedonic motives (Yu, Jung, Kim, & Jung, 2018), socialization (Hou, Guan, Li, & Chong, 2020), social cognition (Lim et al., 2020), social identification (Zhou, Chen, & Su, 2019), as well as streamer-viewer congruence (Park & Lin, 2020). Among these, many researchers believe that social identification within live communities plays a significant role in shaping viewer behavior (Johnson & Woodcock, 2019). By joining these communities, users develop an affinity for streamers and the live streaming environment, satisfying their curiosity through continuous watching (T. Zhang, Li, & Hua, 2025). On the other hand, through this engagement, they fulfill their emotional needs and reinforce their social status within the community (Xu, Tayyab, Jia, & Huang, 2025).

Among these, chat streaming—as an interactive and real-time dimension of the streaming experience—provides an opportunity for the formation of social bonds, interaction with other viewers, and identity expression (Sjöblom & Hamari, 2017). Platforms such as Twitch create a space where users, by typing messages in chat, experience a sense of social presence and belonging to a virtual community

(Hamilton, Garretson, & Kerne, 2014).

Based on the Uses and Gratifications Theory (UGT), users select media to satisfy specific needs such as social interaction and entertainment (Thongsri, Shen, Bao, & Alharbi, 2018). In this context, studies have shown that the need for interaction and the need for entertainment are among the most important motivations for users to participate in streaming platforms (Chiu, Won, & Bae, 2024). The need for interaction refers to an individual's desire for communication, exchange of opinions, and a sense of belonging to others, while the need for entertainment relates to the pursuit of pleasure, variety, and escape from boredom. These two needs, in interaction with chat streaming, can lead to behaviors that go beyond the primary functions of the media.

The need for interaction is one of the fundamental motivations for users in utilizing social media and interactive platforms, referring to individuals' desire to establish social connections, exchange ideas, receive feedback, and experience a sense of belonging (Gao, Zhao, Zhai, Zhang, & Li, 2025). In the context of e-sports chat streaming, this need manifests through participation in live conversations, interaction with the streamer and other viewers, and sending reactive messages. Although such interactions may initially be perceived as passive or peripheral behaviors, in many cases they occur in the form of cyberloafing—that is, engaging in activities unrelated to the user's primary task within an online environment. While watching a stream, users might enter the chat purely for entertainment or emotional release without an initial intention to converse, sending messages or starting conversations; a behavior that can be analyzed within the framework of cyberloafing (Lim et al., 2020). From the perspective of social identity theory, these seemingly marginal behaviors can gradually facilitate the internalization of roles, reinforcement of in-group identity, and formation of a sense of belonging to the virtual streaming community (X. Ma, Zou, & Lv, 2022). Thus, cyberloafing is not merely a barrier to meaningful interactions but can, in some situations, serve as a gateway for users to enter participatory spaces and strengthen social identity. Especially when these informal interactions are met with responses, reactions, or empathy from other users, the conditions for reproducing and reinforcing group identity are further enhanced (Gao et al., 2025).

In the context of e-sports chat streaming, users, beyond merely watching game content, utilize their presence in chat rooms to engage in a multifaceted entertainment experience that includes interaction, joking, participation in live discussions, and even observing others' reactions. This active presence in the chat environment goes beyond mere entertainment, enabling the formation of social bonds and the experience of collective presence (Polat & Şenbiçer, 2022). On the other hand, cyberloafing behavior—as a form of aimless and unrestrained wandering in the online space—often functions in these environments as a way to seek new opportunities for interaction and entertainment (Kaluarachchi, Wickramatunga, & Dewapriya, 2023). Users may enter chat rooms without specific planning or clear objectives and spontaneously and involuntarily participate in response to the real-time flow of conversations and ongoing events. This cyberloafing process, while reducing psychological pressures arising from the need for goal-oriented performance, acts as a psychological mechanism to fulfill the need for entertainment, allowing users to engage in a flexible and low-commitment space and to achieve a pleasurable experience of social participation.

In classical literature, cyberloafing is often defined as a form of time-wasting or withdrawal from formal duties in the virtual space. However, in informal contexts and interactive media such as e-sports chat

streaming, this phenomenon can acquire deeper social meanings (Xiang et al., 2022). Cyberloafing in these spaces typically manifests as conscious or semi-conscious wandering in chat boxes, observing others' conversations, participating in discussions unrelated to the main stream content, and sending messages to maintain connections. Although these behaviors may initially appear passive or aimless, from a psychological perspective they can be understood as efforts to maintain social interaction, reduce feelings of isolation, and strengthen collective bonds (Lim, 2002). These actions allow users to participate in collective discourse without the obligation of formal or direct engagement and gradually experience a sense of social identity within the virtual streaming community (Kaluarachchi et al., 2023). Interactive wandering in chat streams, especially when accompanied by positive feedback and acceptance from others, can internalize themes of group belonging, social legitimacy, and collective identity in users' minds. From this viewpoint, cyberloafing is not merely a passive behavior but a psychological mechanism for integrating individuals into virtual social networks and shaping social identity (Gualdo, Hunter, Durkin, Arnaiz, & Maquilón, 2015).

Social identity refers to the perception individuals have of their membership in a social group, considering it as part of their self-definition (Xue, Newman, & Du, 2019). Within digital platforms, especially in interactive environments like e-sports chat streaming, this social identity is often reinforced through the formation of social relationships, shared experiences, and repeated interactions with other users (Calapez, Ribeiro, Almeida, & Pedragosa, 2024). In such spaces, users not only perceive others as real and recognizable individuals but also see themselves as active and meaningful members of a virtual community (Albertson, 1980). This intertwining of perceptions leads to a strengthened sense of group cohesion and social belonging. Particularly, when users receive positive feedback through interactions with others or participate in collective momentary experiences, they feel part of a broader "we" (Chen & Liao, 2022). This feeling plays a crucial role in the formation and reinforcement of users' social identity and, in the long term, increases their commitment, loyalty, and active participation in live streaming platforms (S. J. Lee, Jeong, Kim, & Kong, 2023). Moreover, perceived social presence can function beyond simple interaction; it often provides a context for expressing positive emotions, experiencing a sense of worth, and forming meaningful bonds with other community members online (Park & Lin, 2020), thereby contributing to the strengthening of social identity and group belonging among users (Chen & Liao, 2022).

With the expansion of digital technologies and the widespread use of live streaming platforms, especially in the field of e-sports, the experience of watching live stream content has transformed from a merely passive activity into a multidimensional and interactive action. These spaces enable users to actively participate in the streaming process through tools such as live chat, emojis, real-time reactions, and interactions with streamers and other viewers. One important dimension of this participation is the formation of a sense of social identity within a virtual context; a feeling in which users perceive themselves not only as viewers but also as members of a shared community, interacting with others, feeling understood, influential, and attached to a specific group. Among these, two fundamental psychological needs — the need for social interaction and the need for entertainment — play a central role in shaping this feeling. Users, especially in the context of chat streaming, seek to establish social connections, share emotions, and receive immediate feedback; meeting these needs can foster a sense of belonging and ultimately stabilize collective identity among them. On the other

hand, the entertaining and pleasurable features of streams also play a complementary role in attracting and retaining users, acting as an emotional motivator that encourages repeated participation in media activities. In such digital environments, behaviors like cyberloafing — which in its modern meaning goes beyond deviant or unproductive activities — can act as a psychological mediator in fulfilling these needs. Particularly, interactive or social cyberloafing can provide a platform for satisfying the need for communication and entertainment during leisure time, and even while engaging in primary tasks. Although traditionally these actions might carry a negative connotation in work environments, in media consumption settings such as chat streaming, they can play a positive role in strengthening the sense of belonging, social presence, and ultimately, the formation of user identity.

Despite the growing literature on user behavior in live streaming environments, the process through which chat stream users' sense of identity forms—within the framework of their fundamental needs and intermediary behaviors—remains underexplored. Particularly in the context of e-sports, where real-time interactions, group participation, and social identity formation are key components of the media consumption experience, examining the relationship between the need for interaction, the need for entertainment, and users' sense of identity is especially important. In this regard, cyberloafing—as a behavior often involving purposeful roaming in the chat stream environment for interaction or temporary escape from primary activities—can serve as a mediating role. In other words, users seeking social connection or entertainment may, through interactive cyberloafing, create the necessary conditions for constructing collective identity and experiencing a sense of belonging to the chat community. Therefore, the present study aims to explain the mechanisms influencing users' sense of identity in e-sports chat streaming by investigating the causal relationships among the need for interaction, the need for entertainment, and cyberloafing, in order to provide a conceptual framework for a more precise understanding of this socio-psychological process.

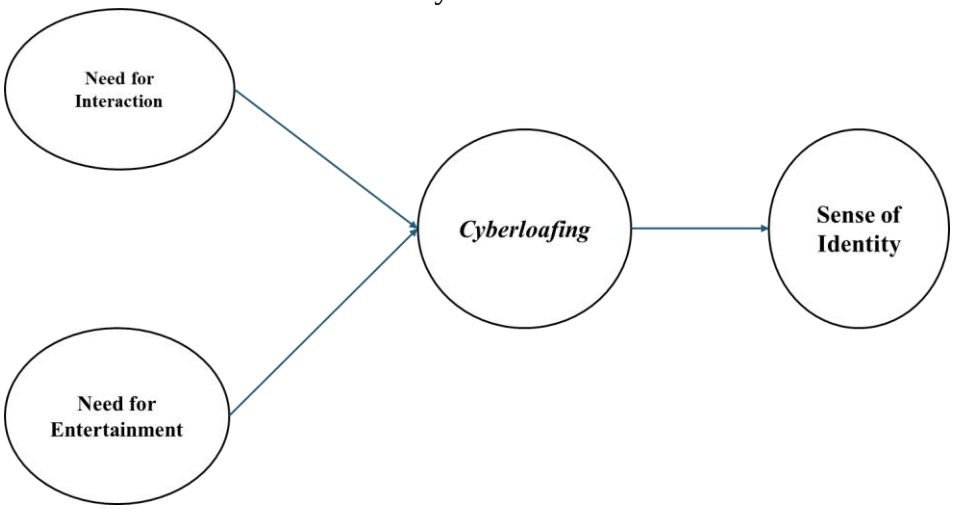


**Figure 1. Conceptual model of the study**

## Materials and methods

This study, given its objective, is classified as applied research and falls within the category of quantitative studies. Regarding the data collection method, it is a descriptive correlational study conducted in a field setting. The statistical population of this study consisted of Iranian viewers of live streaming platforms for e-sports who had at least one year of regular experience watching these streams

and regularly participated in conversations in the interactive chat box. The inclusion criteria for participation in the study were having at least one year of regular experience watching e-sports live streams, consistent activity in live stream chat rooms, and possessing an active account on one of the streaming platforms such as Twitch, YouTube, or Rubika. Samples were selected through convenience sampling from the statistical population. The data collection instrument for the social presence model in this research was a standardized questionnaire developed by Metin-Orta and Demirtepe-Saygılı (2023). The questionnaire consisted of 20 items, measured on a 5-point Likert scale ranging from 1 (very low) to 5 (very high), and was translated into Persian.

To determine the sample size for partial least squares (PLS) analysis, the minimum sample size was first calculated based on the recommendation of Barclay, Higgins, and Thompson (1995). According to this method, the sample size is the larger value derived from two rules, as follows: Rule one: 10 times the number of indicators in the measurement model with the greatest number of indicators among the measurement models of the main research model. Rule two: 10 times the largest number of structural paths pointing to any single latent variable in the structural model of the main research. Based on these two rules, the minimum sample size was considered to be between 40 and 60 participants. However, to achieve more reliable responses and due to the unknown size of the population, Cochran's formula was used to estimate the sample size. To this end, 30 questionnaires were initially distributed using convenience sampling within the target population, and the preliminary variance was calculated.

The initial variance was calculated as 0.144, and accordingly, based on Cochran's formula, the sample size was estimated to be 221. Considering the possibility of attrition or non-response, a total of 230 electronic questionnaires were distributed via Telegram and Instagram channels from Esfand 1403 to Farvardin 1404 (February to April 2025). Of these, 220 questionnaires were fully completed and included in the analysis. Data collection was conducted electronically. To assess face and content validity, following the translation of the questionnaires (to evaluate the validity of the translated version, the process of translation and back-translation was carried out based on the approach proposed by Beaton, Bombardier, Guillemin, & Ferraz, 2000), the questionnaires were reviewed by seven faculty members specializing in sports management and marketing. They were asked to provide feedback on the wording, content, and alignment of the questions with the study constructs. After reviewing their suggestions and comments, the final version of the questionnaire was developed. To assess the reliability of the questionnaires, Cronbach's alpha coefficient was used, and after analysis, the alpha value for the employed questionnaires was found to be above 0.7. To examine both direct and indirect effects of the variables, Structural Equation Modeling (SEM) was conducted using PLS software. Smart PLS4 structural equation modeling is considered suitable for analyzing complex research models that integrate relevant theories and empirical data. A two-step approach was adopted for data analysis: first, the outer model was used to assess convergent and discriminant validity, and then the inner model was employed to test the research hypotheses (Leguina, 2015). Composite Reliability (CR), internal consistency reliability (Cronbach's alpha), convergent validity, and discriminant validity were utilized to evaluate the reliability and validity of the outer model (Hair et al., 2019). Furthermore, the Variance Inflation Factor (VIF) index is applicable for those dependent variables influenced by more than one variable. The results of these indices are presented in Table 1.

**Table 1. Results of Confirmatory Factor Analysis and Reliability of Questionnaires**

| *Variables* | *Questions* | *FL* | *VIF* | *Cronbach's Alpha* | *CR* | | *AVE* |
|---|---|---|---|---|---|---|---|
| | | | | | *rho-a* | *rho-c* | |
| Need for Interaction (NI) | The ability for live and immediate interaction in chat streaming is a key factor in its appeal for me. | 0.605 | 1.30 | 0.709 | 0.716 | 0.771 | 0.508 |
| | Active participation in chat streaming conversations gives me a sense of being seen and accepted. | 0.760 | 1.27 | | | | |
| | I welcome the opportunities chat streaming provides to connect with like-minded individuals. | 0.764 | 1.21 | | | | |
| | Interacting with other users in chat streaming is an important part of my experience in this environment. | 0.740 | 1.42 | | | | |
| | Chat streaming allows me to feel a sense of belonging and solidarity with others in real time. | 0.686 | 1.22 | | | | |
| Need for Entertainment (NE) | I use chat streaming for entertainment and to fill my leisure time. | 0.887 | 2.10 | 0.790 | 0.831 | 0.864 | 0.615 |
| | Participating in chat streaming is an enjoyable recreational activity for me. | 0.740 | 1.55 | | | | |
| | Chat streaming feels like an exciting live program that I find captivating to watch. | 0.816 | 1.68 | | | | |
| | Being in the energetic environment of chat streaming makes me feel better about myself and my time. | 0.678 | 1.41 | | | | |
| Cyberloafing | When I enter the chatbox, I sometimes start browsing around spontaneously without any prior plan to see what discussions and conversations are ongoing. | 0.738 | 1.47 | 0.787 | 0.826 | 0.843 | 0.574 |
| | Browsing around the chatbox helps me become more comfortable with new users and initiate conversations more easily. | 0.636 | 1.50 | | | | |
| | Even when I am not actively participating in the chatbox, browsing makes me feel like I am still part of the community and its interactions. | 0.676 | 1.48 | | | | |
| | I consider browsing the chatbox as a way to feel closeness and connection to the streaming community. | 0.771 | 1.53 | | | | |
| | Reading the diverse messages from users in the chatbox is entertaining for | 0.724 | 1.59 | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | me, even if I do not actively engage in the conversations. | | | | | | |
| | Sometimes, I spend hours in the chatbox just to observe jokes, comments, or reactions from users. | 0.770 | 1.44 | | | | |
| Sense of Identity (SI) | When I interact with other users in the chat stream, I feel that I am part of this community. | 0.732 | 1.45 | 0.703 | 0.731 | 0.80 | 0.546 |
| | Conversing with other users in the chatbox increases my sense of belonging to the streaming environment. | 0.756 | 1.55 | | | | |
| | When I participate in chat stream discussions, I feel that my voice is heard and I am seen. | 0.714 | 1.27 | | | | |
| | Through interacting with other users, I have established a position for myself within the chat stream community. | 0.696 | 1.91 | | | | |
| | Engaging with other users in the chat stream strengthens my sense of online identity and belonging within the community. | 0.727 | 1.22 | | | | |

## Results

According to Table 2, based on the results obtained from the questionnaire, the majority of respondents (51%) spend between 1 to 2 hours daily watching live e-sports streams. Additionally, 28% watch for less than one hour, 18% for 3 to 4 hours, and only 3% spend more than 5 hours per day on this activity. Regarding the platforms used for watching streams, Rubika accounts for the highest usage with 54%, followed by YouTube with 22% and Twitch with 20%. Other platforms make up only 4% of user engagement.

**Table 2. Demographic Information**

| | | |
|---|---|---|
| Gender; | Female | 56% |
| | Male | 44% |
| Live Streaming Platforms; | YouTube | 22% |
| | Rubika | 54% |
| | Twitch | 20% |
| | Others | 4% |
| Average daily time spent watching live streams; | Less than one hour | 28% |
| | One to two hours | 51% |
| | Two to three hours | 18% |
| | More than three hours | 3% |

To analyze the data, a two-step approach was adopted. First, the outer model was used to examine convergent and discriminant validity, followed by the inner model to test the

hypotheses (Leguina, 2015). According to Table (1), composite reliability (CR), internal consistency reliability (Cronbach's alpha), convergent validity, and discriminant validity were used to calculate the reliability and validity of the outer model of the research (Hair, Risher, Sarstedt, & Ringle, 2019). Additionally, the VIF (Variance Inflation Factor) index can be calculated for dependent variables influenced by more than one independent variable. The results of these indices showed that the VIF values of the independent variables were below the threshold of 5, indicating no multicollinearity issues in the data. The results demonstrated that the indices in the current study have appropriate validity, with Cronbach's alpha above 0.7, composite reliability above 0.7, and average variance extracted (AVE) greater than 0.5 (Vinzi, Trinchera, & Amato, 2010). Furthermore, the factor loadings of the questions were also appropriate, meaning that the questions effectively explain the dimensions. Therefore, with full confidence, the results related to the final research model can be reported. To assess validity, the criteria of "cross-loading matrix," "Fornell-Larcker criterion," and the "heterotrait-monotrait ratio (HTMT)" were used (Leguina, 2015). When HTMT values are high, issues with discriminant validity arise. (Henseler, Ringle, & Sarstedt, 2015) suggest a threshold value of 0.9 for structural models with conceptually very similar constructs.

**Table 3. Heterotrait-Monotrait Ratio (HTMT)**

| | Cyberloafing | Need for Interaction | Need for Entertainment | Sense of Identity |
|---|---|---|---|---|
| Cyberloafing | | | | |
| Need for Interaction | 0.785 | | | |
| Need for Entertainment | 0.776 | 0.835 | | |
| Sense of Identity | 0.626 | 0.806 | 0.812 | |

The results presented in Table 3 showed that the external loadings of the latent variables were higher than the cross-loadings (with other measurements), which is confirmed. Additionally, in the Fornell-Larcker method, the bold diagonal AVE values were greater than the inter-variable correlation coefficients, indicating high discriminant validity (Hair Jr et al., 2021). Overall, the previous results confirm and support the reliability of the scale, as well as convergent and discriminant validity, which are validated in the outer measurement model of the study. Accordingly, the inner model (Figure 2) can be evaluated to test the study's hypotheses.




**Figure 2. Path Coefficient Values and t-Statistics for Hypotheses Related to the Research Model Paths**

**Table 4. Path Coefficient Values and t-Statistics for Hypotheses Related to the Research Model Paths**

| Research Hypotheses | | | Path Coefficient | T- value | P- value | Hypothesis Test Result |
|---|---|---|---|---|---|---|
| Need for Interaction | → | Cyberloafing | 0/389 | 6/655 | 0/001 | Accepted |
| Need for Entertainment | → | Cyberloafing | 0/512 | 8/999 | 0/001 | Accepted |
| Cyberloafing | → | Sense of Identity | 0/546 | 11/107 | 0/001 | Accepted |

In Figure (2) above, it can be observed that the t-statistic values for all paths in the research model are estimated to be greater than 1.96. Additionally, it should be noted that the standardized path coefficients for all hypothesis paths are estimated to be positive. The results indicate that the effect of variables on each other in all paths is significant, direct, and positive.

The first criterion for evaluating the structural model fit is the $R^2$ coefficients related to the endogenous (dependent) latent variables, which

indicate the impact of an endogenous variable. The values of 0.19, 0.33, and 0.67 are considered as thresholds for weak, moderate, and strong effects, respectively. The higher the $R^2$ values for the endogenous constructs of a model, the better the model fit. The second criterion for evaluating the structural model is $Q^2$, which determines the predictive power of the model for dependent variables. All endogenous constructs have established the values of 0.02, 0.15, and 0.35 as thresholds for low, moderate, and strong predictive power, respectively. Finally, the SRMR (Standardized Root Mean Square Residual) value should be less than 0.09, and the NFI (Normed Fit Index) value should be greater than 0.9 to ensure a satisfactory model fit with the data (Hair Jr et al., 2021). The model fit results are presented in Table (5).

**Table 5. Coefficient of Determination ($R^2$), Predictive Relevance ($Q^2$), and Model Fit (SRMR-NFI)**

| Variables | R-square | Adjusted R-square | cv-red | cv-com |
|---|---|---|---|---|
| Cyberloafing | 0.689 | 0.687 | 0.291 | 0.268 |
| Sense of Identity | 0.299 | 0.295 | 0.116 | 0.178 |
| *SRMR* | *0.81* | *NFI* | *n/a* | |

As evident from Table 5, the $R^2$ values for the research variables generally fall within the desirable range, indicating a good model fit. Additionally, the $Q^2$ values of the variables further confirm the appropriate fit of the model.

**Discussion**

Recent studies have shown that, contrary to the traditional perspective on cyberloafing, this behavior can also yield positive outcomes. For example, some research has reported that cyberloafing can enhance individuals' creativity and psychological well-being (Wagner et al., 2012). Additionally, there is evidence suggesting that the effects of cyberloafing are often dual in nature and can be either beneficial or detrimental depending on the context in which it occurs (Zhang et al., 2021). In the realm of video games and live streaming, it has also been observed that platforms like Twitch, by providing enjoyment, entertainment, and social interaction, help users experience a sense of belonging and participation in a virtual community (Hilvert-Bruce et al., 2018). Furthermore, motivational research indicates that Twitch viewers are often driven by motives such as "being part of a community" and "interacting with other users via chat" when engaging with the platform (Sjöblom & Hamari, 2017).

This study, focusing on chat streams as an interactive-social domain within the context of live broadcasting, seeks to explore the role of users' psychological needs in explaining their sense of social identity. In this regard, the Uses and Gratifications Theory (UGT) provides an appropriate framework for analyzing user behavior. This theory posits that individuals choose media based on specific needs such as social interaction, entertainment, escapism, and identity expression (Sundar & Limperos, 2013). Accordingly, two fundamental needs — the "need for interaction" and the "need for entertainment" — have been considered as predictor variables in the conceptual model of this study.

The demographic findings of this study provide a clear picture of Iranian users' consumption patterns of live e-sports streams. Results show that over half of the respondents (51%) spend between one to two hours daily watching live streams. Additionally, around 18% dedicate more time to this activity (three to four hours per day), while only 3% of users engage in streaming for more than five hours a day. This

pattern suggests that, for a significant portion of users, participation in live streaming has evolved into a stable and semi-daily media habit — likely creating a suitable environment for the emergence of repetitive behaviors such as engaging in chat stream interactions and expressing social identity.

In terms of the platforms used, the results reveal a notable inclination among Iranian users toward domestic platforms; specifically, Rubika emerged as the most frequently used streaming platform, accounting for 54% of responses. In contrast, YouTube and Twitch were used by 22% and 20% of participants, respectively. This pattern suggests that although users are familiar with international platforms, access and localization play a pivotal role in platform selection within Iran's sociocultural context. This dynamic may contribute to greater diversity in the nature of interactions and user expectations within chat streams. Ultimately, repeated engagement in these conversational spaces not only addresses individual needs but also exposes users to shared values, language, humor, norms, and symbols. As a result, a gradual process of social internalization occurs, fostering the development or reinforcement of social and group identity (Sjöblom & Hamari, 2017; Hilvert-Bruce et al., 2018). In this context, the chat stream functions not merely as a communication tool, but as a space for digital identity formation—a space where users actively reconstruct their social selves through dialogue, humor, empathy, and participation.

The results of structural equation modeling revealed that the need for interaction has a positive and significant effect on users' cyberloafing behavior ($\beta = 0.389$, $t = 6.65$, $p < 0.001$). The relatively high path coefficient ($\beta = 0.389$) indicates that as users' perceived need for interaction increases, their tendency to engage in cyberloafing behaviors also significantly rises. Furthermore, the t-value exceeding 1.96 and the p-value below 0.001 confirm that this relationship is not only statistically significant but also demonstrates a strong and stable effect size.

This finding aligns with the assumptions of the Uses and Gratifications Theory (UGT), which emphasizes the active role of users in selecting media to fulfill their psychological and social needs (Sundar & Limperos, 2013). Accordingly, it can be argued that users do not perceive chat streaming as a peripheral or merely recreational activity, but rather as a space for satisfying interpersonal and social interaction needs.

Moreover, it can be argued that the need for interaction is particularly pronounced among users who engage with chat streams on a daily or regular basis. The demographic data from the present study support this point, showing that a majority of users (51%) spend between one to two hours per day watching live streams. This amount of time provides ample opportunity for the development of habitual and sustained interactive behaviors, characteristic of cyberloafing-like engagement.

In this context, cyberloafing behavior, as a form of active use of online time to interact with others, does not necessarily carry a negative function. On the contrary, it can serve as a mediating mechanism for psychological recovery, social bonding, and collective participation. In other words, users' drive for interaction is not expressed through formal behaviors, but rather through informal and even unofficial channels such as chat streams.

Moreover, this finding aligns with previous research suggesting that cyberloafing can be viewed as an effective strategy for stress reduction, enhancing social vitality, and strengthening interpersonal connections (Wagner et al., 2012; Zhang et al., 2021). Therefore, within the context of live streaming platforms, cyberloafing is not regarded as a passive or disruptive behavior, but rather as a constructive mechanism for fulfilling users' interaction-oriented needs.

The COVID-19 pandemic not only temporarily restricted human interactions but also redefined the need for social interaction among digital generations. Individuals, especially younger users, turned to virtual platforms to compensate for the lack of face-to-face contact, and even after restrictions were lifted, this behavioral pattern largely became institutionalized. Users increasingly seek voluntary, low-stress interactions without immediate obligations. Chat streams, by enabling anonymous or semi-anonymous participation, provide a social space free from pressure to respond. Therefore, cyberloafing is not a deviation but rather a novel social interaction strategy within live streaming contexts that helps satisfy the need for interaction and even contributes to the formation of social identity.

Based on the results of the structural model, the variable "need for entertainment" has a positive and significant effect on cyberloafing behavior ($\beta = 0.512$, $t = 8.99$). This finding indicates that the more users turn to live streaming platforms to satisfy their entertainment needs, the higher the likelihood of exhibiting cyberloafing behaviors in the chat stream environment.

Entertainment in the streaming context takes on a participatory and interactive form. Unlike traditional entertainment (such as passive TV watching), users in chat streams interact in real time with the content, the streamer, and other users. This environment encourages users to engage in behaviors like cyberloafing as part of an enjoyable experience.

With a path coefficient of 0.512, it is evident that the need for entertainment plays a significant role in increasing cyberloafing behavior. In other words, the stronger the users' motivation to seek fun and enjoyment in the chat stream context, the more likely they are to engage in cyberloafing—such as side participation in the chat while watching the stream. From a media psychology perspective, this can be explained by the fact that entertainment is one of the most important psychological drivers for continued consumption of digital media and allows users to reduce environmental pressures and temporarily escape everyday stresses, thereby achieving greater psychological satisfaction (Vorderer, Klimmt, & Ritterfeld, 2004).

The very high t-value of 8.99 also indicates a high statistical confidence in this relationship, with the probability of error in this result being nearly zero. This underscores the importance of the need for entertainment within interactive live streaming platforms and shows that users in these environments are not only engaged in watching content but are also seeking complementary and ancillary experiences that provide greater enjoyment and pleasure.

The need for entertainment, as one of the fundamental psychological needs of digital media users, is a significant driver for the formation of multitasking behaviors such as cyberloafing. In the context of live streaming for e-sports, users are not merely passive consumers of content; rather, they tend to actively participate in recreational processes and enjoy side interactions. These simultaneous behaviors alongside content viewing provide an opportunity for temporary escape from psychological pressures and enhance excitement, thereby increasing users' psychological satisfaction.

According to the theory of emotional self-regulation, users who engage in cyberloafing activities while watching streams are better able to regulate their positive emotions, which in turn increases their motivation to remain on the platform (Gross, 2015). In other words, cyberloafing enables users to fulfill both their recreational and emotional needs simultaneously through multitasking in the digital environment, resulting in a richer and more sustained entertainment experience.
Moreover, based on Media Richness Theory, streaming platforms—through diverse features such as live chat, instant reactions, emoji sharing, and other interactive tools—provide a

rich and flexible environment for fulfilling the need for entertainment, thereby increasing the likelihood of cyberloafing (Daft & Lengel, 1986). This media richness not only enhances the quality of entertainment but also allows users to engage in their interactions in more creative and diverse ways, which in turn reinforces cyberloafing behavior. From a social psychology perspective, engaging in cyberloafing can also foster a sense of social participation and belonging within a group. Users who become active in the stream chat environment through entertainment do not merely satisfy their recreational needs but also strengthen their social relationships and gradually reconstruct their social identity. This process aligns with the findings of Sjöblom and Hamari (2017), who emphasize that interactive participation on streaming platforms reinforces the experience of group identity formation.

The findings of this study indicate that cyberloafing has a significant and positive effect on the formation and reinforcement of users' social identity, with a path coefficient of 0.546 and a t-value of 11.10, reflecting the strength and statistical reliability of this relationship. These findings can be explained from both theoretical and practical perspectives. From a social psychological standpoint, social identity is shaped through group affiliation and social interaction (Tajfel & Turner, 1986). Cyberloafing, as a behavior where users engage in side activities while performing their primary tasks and interact with others, creates opportunities for individuals to connect with fellow members in virtual spaces and experience a sense of belonging and togetherness. Such interactive online experiences—particularly in dynamic environments like live stream chatrooms—enhance the feeling of "being together," thereby strengthening one's social identity. In addition, Self-Determination Theory (Deci & Ryan, 2000) suggests that fulfilling basic psychological needs such as relatedness and sense of belonging enhances intrinsic motivation and supports the development of both individual and social identity. Cyberloafing plays a vital role in satisfying these needs by offering opportunities for informal interaction, receiving social support, and engaging in emotional exchanges. Therefore, this behavior functions not merely as a recreational activity but also as a mechanism for reinforcing users' identity structures. Moreover, within the framework of Social Presence Theory (Short et al., 1976), users' perception of the real and active presence of others in digital spaces directly affects their experience of social identity. Cyberloafing increases the chances of real-time message exchange, empathy, and immediate reactions—thus enhancing the quality of social presence and contributing to a deeper formation of collective identity. Furthermore, experiences of cyberloafing can reduce feelings of loneliness and social isolation, which are key factors in the development and sustainability of social identity (Cacioppo & Patrick, 2008). Through receiving positive social feedback in these online interactions, users build self-confidence and a more positive self-concept, ultimately fostering a stronger sense of identity.

## Conclusion

Given the importance of social identity formation and reinforcement among users of e-sports streaming chat platforms, policymakers and stakeholders in the media and technology sectors in the country should formulate strategies and programs aimed at enhancing social belonging and fostering high-quality online communities within live streaming environments. Based on the findings of this study, which identify psychological needs for interaction and entertainment as key drivers of users' identity formation, the development of platforms that allow for cyberloafing as an intermediary behavior could significantly contribute to strengthening social bonds and promoting a collective identity.

Fostering a sense of community among users not only reinforces their social presence in the virtual space but also increases their willingness to actively engage and continuously interact on domestic platforms. Therefore, digital media policymakers and platform managers need to develop and implement targeted strategies that correspond to the specific functions of different types of platforms—whether educational, entertainment-based, or gaming-oriented. In the case of e-sports streaming chat platforms, enabling tools and opportunities for participation in live discussions, sharing gameplay experiences, and collaborative strategy analysis can serve as significant motivators for user engagement and ultimately contribute to the strengthening of group identity.

Moreover, empowering streamers—as key actors and primary facilitators of user experience—should be considered a top priority. Streamers who possess strong communication skills, creativity, empathy, and the ability to establish meaningful connections with audiences can foster greater user loyalty and sense of belonging, thereby cultivating an environment conducive to the development of collective identity. Specialized training in interactive communication, personal branding, and non-verbal communication skills is especially vital in the context of competing with international platforms.

Ultimately, reinforcing bidirectional interaction structures and implementing motivational mechanisms for active user participation—such as awarding recognition badges to highly engaged users or developing personalized communication features—can significantly enhance the dynamism and cohesion of virtual communities. In parallel, continuous attention to users' psychological and emotional well-being and the provision of social support structures can improve digital social health and stabilize users' sense of identity within e-sports streaming chat environments.

In sum, by understanding the mediating role of cyberloafing in the identity formation process, cultural, technological, and media authorities in the country must align their efforts with users' psychological needs to promote purposeful interaction and entertainment on domestic platforms. Such efforts will not only increase user satisfaction and loyalty but will also help build a rich, localized environment for the growth of both individual and collective identity.

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